SAFETY DATA SHEET

1. Identification

Product identifier **KBM-403**

Other means of identification

Sales Code 1480S0

Recommended use Silanes,Silane coupling agents
Synthetic resin modifier ,
Treatment for composite materials (enhanced function, higher quality)

Recommended restrictions Industrial use only.

Manufacturer/Importer/Supplier/Distributor information

Name Shin-Etsu Silicones of America, Inc.
Address 1150 Damar Drive, Akron, OH 44305 USA
Contact Regulation compliance group
Telephone Number +1-330-630-9860
Fax Number +1-330-630-9855
Emergency Phone Number Chemtrec: +1-800-424-9300 (Within US)
Chemtrec: +1-703-527-3887 (Outside US)

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Serious eye damage/eye irritation Category 1

Environmental hazards Not classified.

OSHA defined hazards Not classified.

*Hazards not stated here are "Not classified", "Not applicable" or "Classification not possible".

Label elements

Signal word Danger

Hazard statement Causes serious eye damage.

Precautionary statement

Prevention Wear protective gloves/protective clothing/eye protection/face protection.

Response If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Storage Not available.

Disposal Not available.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

Substance(s) formed under the condition of use This product slowly reacts with water, acids or bases to evolve following compounds:
Methanol

HMIS® ratings Health: 3
Flammability: 1
Physical hazard: 0

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
3-Glycidoxypropyltrimethoxysilane		2530-83-8	> 99

Chemical name	Common name and synonyms	CAS number	%
Methanol(Impurity)		67-56-1	< 1

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation
Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact
Wash skin with soap and water. Get medical attention if irritation develops and persists.

Eye contact
Rinse immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion
Rinse mouth. Get medical attention immediately.

Most important symptoms/effects, acute and delayed
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Indication of immediate medical attention and special treatment needed
Treat symptomatically.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media
Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Water.

Specific hazards arising from the chemical
By heating and fire, harmful vapors/gases may be formed.

Special protective equipment and precautions for firefighters
Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots, and self-contained breathing apparatus.

Fire-fighting equipment/instructions
Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Ensure adequate ventilation. Wear appropriate personal protective equipment.

Methods and materials for containment and cleaning up
Eliminate sources of ignition.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent entry into waterways, sewer, basements or confined areas.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

7. Handling and storage

Precautions for safe handling
Use care in handling/storage. Provide adequate ventilation. Do not breathe mist or vapor. Do not get this material in contact with eyes. Wear appropriate personal protective equipment. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities
Keep container tightly closed. Keep out of the reach of children. Store in a cool, dry place out of direct sunlight. Keep in original container.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Methanol(Impurity) (CAS 67-56-1)	PEL	260 mg/m3
		200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Methanol(Impurity) (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Methanol(Impurity) (CAS 67-56-1)	STEL	325 mg/m3
		250 ppm
	TWA	260 mg/m3
		200 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Methanol(Impurity) (CAS 67-56-1)	15 mg/l	Methanol	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US. ACGIH Threshold Limit Values

Methanol(Impurity) (CAS 67-56-1) Can be absorbed through the skin.

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

METHYL ALCOHOL; METHANOL (CAS 67-56-1) Can be absorbed through the skin.

US. Minnesota Hazardous Substances List (Minn. Rules 5206.0400).

Methanol(Impurity) (CAS 67-56-1) Skin designation applies.

US. NIOSH: Pocket Guide to Chemical Hazards

Methanol(Impurity) (CAS 67-56-1) Can be absorbed through the skin.

US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A

Methanol(Impurity) (CAS 67-56-1) Can be absorbed through the skin.

Appropriate engineering controls Provide adequate general and local exhaust ventilation. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection Tightly sealed safety glasses according to EN 166.

Skin protection

Hand protection Wear protective gloves.

Other Wear suitable protective clothing.

Respiratory protection If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Form Liquid.

Color Colorless. Clear.

Odor Slight odor.

Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	554 °F (290 °C)
Flash point	> 201.2 °F (> 94 °C) Closed Cup 300.2 °F (149 °C) Open Cup
Evaporation rate	< 1 (Butyl Acetate=1)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	No data
Flammability limit - upper (%)	No data
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 1.3 kPa (25 °C)
Vapor density	> 1 (air=1)
Relative density	1.07 (25 °C)
Solubility(ies)	
Solubility (water)	Not soluble (Hydrolyzed with water)
Partition coefficient (n-octanol/water)	No data
Auto-ignition temperature	> 392 °F (> 200 °C)
Decomposition temperature	Not available.
Viscosity	3.05 mm2/s (25 °C)
Other information	
Molecular weight	No data

10. Stability and reactivity

Reactivity	Slowly reacts with water, acids or bases.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	None known.
Incompatible materials	Strong oxidizing agents. Water, acids or alkalis
Hazardous decomposition products	This product slowly reacts with water, acids or bases to evolve following compounds: Methanol Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product: Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Expected to be a low ingestion hazard.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye damage.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
3-Glycidoxypropyltrimethoxysilane (CAS 2530-83-8)		
Acute		
Dermal		
LD50	Rabbit	3.97 ml/kg
Inhalation		
LC50		5.3 mg/l, 4 hr
Oral		
LD50	Rat	7010 - 16900 mg/kg
Subacute		
Oral		
NOAEL	Rat	> 1000 mg/kg, 28 days
Methanol(Impurity) (CAS 67-56-1)		
Acute		
Dermal		
LD50	Rabbit	15800 mg/kg
Inhalation		
LC50	Rat	64000 ppm, 4 Hours
		87.5 mg/l, 6 Hours
Oral		
LD50	Mouse	7300 mg/kg
	Rabbit	14.4 g/kg
	Rat	5628 mg/kg

Skin corrosion/irritation SKIN-RABBIT : (P.I.I=1.94)

Serious eye damage/eye irritation EYE-RABBIT : Irritation score 11.8 of max 110, corneal opacity not fully reversible..

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization No skin sensitizing(guinea pig)

Germ cell mutagenicity Positive(Bacteria), Negative(Chromosome analysis)

Carcinogenicity Was not dermal oncogenic

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity Reproductive effect:NOAEL 1000mg/kg/day(Rat), Developmental toxicity:NOAEL 1000mg/kg/day(Rat)

Specific target organ toxicity - single exposure May cause damage to the following organs.
Optic nerves. Central nervous system. [Methanol]

Specific target organ toxicity - repeated exposure Not available.

Aspiration hazard Not available.

Chronic effects Prolonged inhalation may be harmful.

Further information This product slowly reacts with water, acids or bases to evolve following compounds: Methanol

12. Ecological information

Ecotoxicity

Components		Species	Test Results
3-Glycidoxypropyltrimethoxysilane (CAS 2530-83-8)			
Aquatic			
Algae	EC50	Algae	268 mg/l, 7 days
			119 mg/l, 7 days

Components		Species	Test Results
		Green algae (Scenedesmus subspicatus)	> 420 mg/l, 72 hr
		Green algae (Selenastrum capricornutum)	350 mg/l, 72 hr (Growth rate)
	LOEC	Algae	50 mg/l, 7 days
Crustacea	EC50	Daphnia	710 mg/l, 48 hr
	NOEC	Daphnia	100 mg/l, 21 days
Fish	LC50	Bluegill (Lepomis macrochirus)	276 mg/l, 96 hr
		Oncorhynchus mykiss	237 mg/l, 96 hr
Methanol(Impurity) (CAS 67-56-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours

Persistence and degradability Causes easily hydrolysis in water or atmosphere.

Bioaccumulative potential Not available.

Mobility in soil Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Follow applicable Federal, State and Local regulations.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This product is not intended to be transported in bulk.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 313 (TRI reporting)

US state regulations

US. Massachusetts RTK - Substance List

Methanol(Impurity) (CAS 67-56-1)

US. New Jersey Worker and Community Right-to-Know Act

Methanol(Impurity) (CAS 67-56-1)

US. Pennsylvania Worker and Community Right-to-Know Law

Methanol(Impurity) (CAS 67-56-1)

US. Rhode Island RTK

Methanol(Impurity) (CAS 67-56-1)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Methanol(Impurity) (CAS 67-56-1) Listed: March 16, 2012

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 02-25-2015

Revision date 06-21-2015

Version # 02

NFPA ratings Health: 3
Flammability: 1
Instability: 0

NFPA ratings

Disclaimer This information is offered in good faith as typical values and not as a product specification. No warranty, expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.
This product has been designed, manufactured and developed solely for general industrial use only. This product is not designed for, intended for use as, or suitable for, medical, surgical or other particular purposes. Users have the sole responsibility and obligation to determine the suitability of this product for any application, to make preliminary tests, and to confirm the safety of this product for their use. Users must never use this product for the purpose of implantation into the human body and/or injection into humans.

Revision Information This document has undergone significant changes and should be reviewed in its entirety.